

Ownership Contestability and Corporate Value in China

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1. Introduction

China's privatization of state-owned assets took off initially by the means of partial privatization, i.e. selling a proportion of the listed firms (mainly former state-owned enterprises) to individual shareholders in the stock market, while securing the rest shares to be held by the state or the state-related agencies. This was materialized perfectly by the split share structure, i.e. the shares held by the state and the state-related agencies are not allowed to be traded in the stock market, while other shares can be freely traded. Non-tradable shares accounted for about two-thirds of total shares in China's stock markets before 2005. This split share structure by design guaranteed state ownership in the listed firms intact for the transition period before 2005. In April 2005 China officially demolished this split share structure by merging non-tradable shares with tradable shares, i.e. non-tradable shares are allowed to be freely traded in the stock market. This reform is often termed as the split share reform or *Gugai*.

Non-tradable shares made Chinese corporate governance different from that of mature market economies. First of all, due to the illiquidity nature of non-tradable shares, ownership has been highly concentrated at the hands of the state and the state-related agencies for a very long time. Hence the controlling shareholders in many Chinese listed firms are the government or the government-related agencies, which unavoidably brought about heavy administrative interventions in Chinese corporations. Secondly, due to the illiquidity nature of non-tradable shares, monitoring on the largest shareholders of Chinese listed firms was very weak due to the following two reasons: (a) internally, there were no other large blockholders

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who are able to challenge the largest shareholder, hence the contestability of the largest shareholder's control position was very weak. Other large shareholders beyond the controlling shareholder were hardly effective in Chinese corporate governance during the period when non-tradable shares existed. (b) externally, there was no corporate takeover market because there was no chance for bidders to purchase these non-tradable shares, which provides the controlling shareholders with a lot of discretion in making corporate decisions. Due to weak monitoring on the largest shareholder, the conflict of interest between the largest shareholder and outside minority shareholders has been extremely high in Chinese corporations. There are sufficient evidence on the expropriation of outside minority shareholders by the controlling shareholders in China (e.g., Aharony et al., 2000; Jian and Wong, 2004; Lin et al., 2007). Therefore, it is obvious that although non-tradable shares have delayed the privatization of state assets and provided stability to the whole transition process in China, its negative impact on corporate governance has become severer.

China's reform in 2005 to liquidate non-tradable shares provides us with a unique platform to examine the changes in the ownership structure of Chinese listed firms in general and in particularly the changes in ownership contestability. After *Gugai*, the nature of non-tradable shares has changed, which provides some opportunities for other blockholders to challenge the controlling position of the largest shareholder by means of purchasing (or the possibility of purchasing) the shares held by the largest shareholder. Although in practice the contest power of other blockholders may be restricted due to the selling constraints of non-tradable shares in a short run, from a longer run point of view the standard finance theory predicts an increased contestability from other blockholders, hence both the investors and the stock market would expect the adjustment in the relative power strength between the controlling shareholder and other large blockholders in making corporate decisions. Logically, a direct outcome of *Gugai* is that the controlling shareholders are under increasing pressure of being challenged by other shareholders. Therefore, we would expect to observe that changes in the distribution of ownership among a few top shareholders should affect corporate value in China.

In this paper, we evaluate the effect of *Gugai* using a panel of 1102 Chinese listed firms during 2002-2008. We find that liquidating non-tradable shares improves firm value via the distribution of ownership among a few top shareholders, supporting the ownership contestability theory. We also find that *Gugai* leads to positive effects by the largest shareholder on firm value probably due to the reduced opportunistic behaviour of the largest shareholder. Additionally, we find that *Gugai* also leads to positive effects by the second, the third and the fourth largest shareholders on firm value, implying that liquidating non-tradable shares brings about active participation in corporate governance by other large shareholders beyond the controlling shareholder. We also provide evidence that the *Gugai* effect varies between state-controlled versus non-state-controlled firms, i.e. the *Gugai* effect is more profound in the listed firms in which the state is the controlling shareholder. In sum, our evidence supports the notion that ownership contestability is a channel through which liquidating non-tradable shares improves corporate value in China.

In Section 2, we review some relevant theories and set up our hypotheses for empirical analyses. Section 3 concerns research design, including data, summary statistics, measurement of variables and empirical specifications. Section 4 discusses estimation results. Section 5 concludes.

2. Theories and Hypotheses

Ownership structure, if appropriately formed, serves as an internal corporate governance mechanism to deal with agency costs between managers and shareholders. In the presence of separation between ownership and management, if ownership is dispersed at the hands of atomic small shareholders, monitoring on the management from shareholders will be very weak due to the free riding problem among small individual shareholders. Shleifer and Vishny (1986) and Demsetz and Lehn (1985) propose to give large shareholders some concentrated ownership in order to motive large shareholders to better monitor the management. However, large shareholders who hold increasingly high ownership may be motivated to abuse their increased power to secure their private benefits of control (La Porta,

Lopez-de-Silanes, Sjhleifer, 1999; Johnson et al.2000, and Claessens et al. 2002). Hence the trade-off between better monitoring on the management and the incentive of expropriating small shareholders raise another issue, i.e. who monitors the monitor? or who can efficiently monitor the largest shareholder in a firm?

The presence of multiple large shareholders can be used as a mechanism of monitoring the controlling shareholder (Bennedsen and Wolfenzon, 2000). The presence of multiple large shareholders refers to that the firm's ownership is not concentrated at the hand of the largest shareholder only, while it should be dispersed among a few large blockholders. The presence of multiple large blockholders challenges the controlling position of the largest shareholder, hence provides incentives for the largest shareholder to restrain himself from behaving opportunistically. The literature mainly focuses on the monitoring effect of multiple blockholders on the largest shareholder due to the increased contestability. For example, Boch and Hege (2001) theoretically prove that due to the existence of multiple blockholders, the incumbent controlling shareholder cannot extract more rents without loosing control. Hence the existence of multiple blockholders may function as a substitute for poor legal protection of dispersed ownership. Maury and Pajuste (2005) using a sample of Finnish firms find that both the Herfindahl index of the voting stakes and the Herfindahl index of the differences between voting stakes are negatively related to firm value, measured by Tobin's Q, suggesting that a more equally distributed voting power increases the firm's value. Gutierrez & Pombo (2009) using a sample of Colombian firms document that a more equal distribution of ownership among large blockholders leads to positive effects on firm value. They believe that multiple blockholders have power to challenge the incumbent controlling shareholder's position, hence reduce the largest shareholder's intention to expropriate small shareholders and improve firm performance. Attig, Guedhami and Mishra (2008) find that dispersed blockholdings mediate the information asymmetric problem and hence lower cost of equity financing. Based on the above-mentioned studies we can conclude that not only the ownership concentration per se, but also the structure of ownership concentration matters for corporate value. Obviously, what concerns the most for ordinary shareholders is how contestable the

controlling shareholder's control position is, in another world, ordinary shareholders are concerned about whether the controlling shareholder restrains his opportunistic behaviour under the pressure of contest from other large shareholders. Hence it is important for the firm to have ownership concentration dispersed at the hands of multiple large shareholders, i.e. ownership should be distributed among multiple large shareholders but not at the hand of a single largest shareholder.

However, according to Bennedsen and Wolfenzon (2000) the existence of multiple blockholders may also bring about negative effects if large blockholders form coalition with the largest shareholder. Maury & Pajuste (2005) document that the incentive to collude with the largest shareholder or to monitor the largest shareholder is significantly affected by the type of the blockholder. For example, they document that some family-related blockholders in family-controlled firms intend to collude with the largest shareholder in extracting profits, while it will be more costly for financial institutions to collude with the largest shareholder in expropriating minority shareholders because these financial institutions are under tight scrutiny from regulations. Faccio, et al. (2000) document that the impact of multiple blockholders varies across regions where corporate governance system differs. They find that the presence of multiple large shareholders reduces expropriation in Europe, confirming the monitoring effect; while it exacerbates profit extraction in Asia, confirming the collusion effect.

Based on the above-reviewed literatures, we are now able to set up the hypotheses for our empirical analyses. We believe that the most important (expected) outcome of *Gugai* in 2005 will be that the largest shareholders are now facing (or are expected to face) increasing competition from other larger shareholders, i.e. the controlling position of the largest shareholders in Chinese listed firms is becoming increasingly challengeable along with the process of liquidating non-tradable shares. More specifically, we expect corporate governance of Chinese listed firms will be improved from the following aspects:

Firstly, *Gugai* makes the controlling position of the largest shareholder challengeable, leading to the enhanced ownership contestability, hence improves firm value.

H1: Liquidating non-tradable shares enhances ownership contestability, leading to positive effects on firm value.

Secondly, the largest shareholders are expected to restrain themselves from behaving opportunistically because they are now under closer scrutiny of the market and under pressure of being challenged by other larger shareholders. This will lead to the reduced activities of expropriating other minority shareholders, hence:

H2: Liquidating non-tradable shares reduces the opportunistic behaviour of the largest shareholder, leading to positive effects by the largest shareholder on firm value.

Thirdly, *Gugai* brings about opportunities for other larger shareholders beyond the largest shareholder to actively participate in corporate decision-makings, which improves corporate governance and firm value.

H3: Liquidating non-tradable shares brings about active participation in corporate governance by other large shareholders beyond the controlling shareholder, improving firm value.

Fourthly, the *Gugai* effect may vary between the state-controlled and non-state-controlled firms because the degree of ownership contestability differs between the two types of firms. More specifically, the *Gugai* effect should be more profound in the firms that have lower ownership contestability, such as the state-controlled firms. Hence:

H4: predictions based on H1, H2 and H3 may vary between state-controlled and non-state controlled firms.

3. Empirical Design

3.1. Data and sample selection

We select the listed non-financial firms that have undertaken *Gugai* during the period 2002-2008. Table 1 summarizes the distribution of the Chinese listed firms that have finished the *Gugai* reform by 2008.

(Table 1 here)

As we can see from Table 1 that the majority of Chinese listed firms conducted *Gugai* in 2005 and 2006, accounting for about 89% of total reformed firms. We exclude financial firms from the list of firms that have finished *Gugai*. Firms that have missing observations for the variables used in the empirical analyses are further excluded. In addition, we take the up 1% and the bottom 1% of the observations out of the sample to reduce the impact of possible outliers. We end up with 1102 sample firms. Among our sample firms, there are 406 firms in which the ratio of state shares to total shares of the firm is larger than 50%, i.e. the state is the ultimate controlling shareholder of these firms; while the remaining 696 firms are non-state controlled firms. We set up a panel data which contains all 1102 sample firms during 2002-2008, total firm year observation is 6654. The data are taken from Chinese Stock Market and Accounting Research Database (CSMAR).

3.2. Descriptive statistics

Table 2 presents various indicators of ownership structure based on the sample firms around the *Gugai* period.

(Table 2 here)

Table 3 is a summary statistics of the variables used in this paper based on the whole sample.

(Table 3 here)

3.3. Empirical specifications

Our primary objective in this paper is to examine whether ownership contestability is the channel through which *Gugai* improves corporate value in China. For this purpose, we use the firm's market performance because the stock market's responses to *Gugai* are more informative than that of the firm's accounting performance. The stock market carries the transaction of the previous non-tradable shares in secondary stock markets and contains investors' expectations from *Gugai*. Hence in our empirical analyses we use the firm's market

to book value ($MtoB$) as the dependent variable. Previous studies that document the impact of ownership contestability have also used the firm's market value (e.g. Maury and Pajuste, 2005; Gutierrez and Pombo, 2009). Our key independent variables concern various indicators of ownership contestability. Examining the distribution of ownership among multiple large shareholders, we focus on the largest shareholder ($Top1$) and the combined strength of the second, the third and the fourth largest shareholder ($Top2-4$). Based on the information on $Top1$ and $Top2-4$, we construct the following ownership contestability indicators:

(a) $Contest1 = (Top1) - (Top2-4)$, it is the difference in ownership ratio between the largest shareholder and the sum of the second, the third, and the fourth largest shareholder.

(b) $Contest2 = (Top1)/(Top2-4)$, it is the ratio of the largest shareholder to the sum of the second, the third, and the fourth largest shareholder.

(c) $Contest3$ is the natural logarithm of the Herfindal concentration index defined as :

$$HI_concentration = \sum [(Top1)^2 + (Top2)^2 + (Top3)^2 + (Top4)^2]$$

(d) $Contest4$ is the natural logarithm of the differences in the Herfindal indices defined as:

$$HI_differences = \sum ((Top1 - Top2)^2 + (Top2 - Top3)^2 + (Top3 - Top4)^2)$$

Notice that all the above-defined indicators of ownership contestability measure to what extent the distribution of ownership among top shareholders is skewed towards the largest shareholder, hence the larger the value of the above mentioned contestability indicators, the less contestable the largest shareholder's position.

To capture the *Gugai* effect, we construct a dummy variable (*Gugai*) that takes the value of one if the observation is taken from the year when the firm has finished the *Gugai* reform, and zero otherwise. We use an interactive term between a specific ownership contestability indicator and the *Gugai* dummy to check the *Gugai* effect on firm value via ownership structure.

Besides the dependent variable and key independent variables, we include the following control variables in the empirical analyses: (a) firm age (*Age*) is the number of

years since the firm was first listed on China's domestic stock exchanges; (b) A dummy variable indicating whether the firm is also listed in either the B share or H share market (*BH*); (c) firm size (*Size*), which is measured by the natural log of the firm's total assets; (d) leverage (*Leverage*) is the ratio of total debt to total assets; (e) Growth potential (*Growth*) stands for annual growth rate of sales; (f) State share (*State*), i.e. the ratio of state shares to total shares, captures the impact of state influence on the firm. (g) Industry effects are controlled by including industry dummies (*Industry*). (h) We also include the *Gugai* dummy (*Gugai*) as an independent control variable to isolate other potential effects of *Gugai* from the effect of *Gugai* via the changes in ownership structure.

Our basic empirical model is:

$$MtoB_{it} = f_i + f_t + \beta_1 Ownership_{i,t-1}^j + \beta_2 Ownership_{i,t-1}^j * Gugai_{i,t-1} + \beta_3 Gugai_{i,t-1} + \beta_4 Age_{i,t-1} + \beta_5 BH_{i,t-1} + \beta_6 Size_{i,t-1} + \beta_7 Leverage_{i,t-1} + \beta_8 Growth_{i,t-1} + \beta_9 State_{i,t-1} + \beta_{10} Industry + \varepsilon_{it} \quad (1)$$

Where f_i and f_t are fixed effect and time effect, respectively. $Ownership_{i,t-1}^j$ stands for the ownership/contestability indicator of type j , where $j = Top1; Top2-4; Contest1; Contest2; Contest3; and Contest4$, respectively. Empirical model (1) allows us to examine if ownership structure is a channel through which *Gugai* affects firm value, i.e.

$$\frac{\partial MtoB_{it}}{\partial Ownership_{i,t-1}^j} = \beta_1 + \beta_2 Gugai_{i,t-1}$$

According to our discussion in Section 2, if liquidating non-tradable shares has improved corporate governance by increasing ownership contestability, then we would expect the estimated coefficient for β_2 to be positive for the ownership/contestability indicators of type j , where $j = Top1; Top2-4; Contest1; Contest2; Contest3; and Contest4$, respectively.

Given that in the Chinese stock market non-tradable shares were mainly held by the state and the state-related agencies, one would expect that liquidating non-tradable shares will affect the firm's market performance differently between state controlled and non-state controlled firms (see Hypothesis 4 in Section 2). To test hypothesis 4, we construct a dummy

variable (*Statedum*) that takes the value of one if the state share ratio is larger than 50%, otherwise it is zero. Correspondingly, we construct a dummy variable (*NonStatedum*) that takes the value of one if the state share ratio is less than 50% , otherwise it is zero. We distinguish the *Gugai* effect between state-controlled and nonstate-controlled cases by using state dummy and non-state dummy in the following empirical model:

$$\begin{aligned}
MtoB_{it} = & f_i + f_t + \beta_1 Ownership_{i,t-1}^j * Statedum_{i,t-1} + \beta_2 Ownership_{i,t-1}^j * Gugai_{i,t-1} * Statedum_{i,t-1} + \\
& + \beta_3 Ownership_{i,t-1}^j * Nonstatedum_{i,t-1} + \beta_4 Ownership_{i,t-1}^j * Gugai_{i,t-1} * Nonstatedum_{i,t-1} + \beta_5 Gugai_{i,t-1} + \\
& + \beta_6 Age_{i,t-1} + \beta_7 BH_{i,t-1} + \beta_8 Size_{i,t-1} + \beta_9 Leverage_{i,t-1} + \beta_{10} Growth_{i,t-1} + \beta_{11} State_{i,t-1} + \beta_{12} Industry + \varepsilon_{it}
\end{aligned} \tag{2}$$

The impact of *Gugai* for state controlled cases is:

$$\frac{\partial^2 MtoB_{it}}{\partial Ownership_{i,t-1}^j} = \beta_1 Statedum_{i,t-1} + \beta_2 Gugai_{i,t-1} * Statedum_{i,t-1}$$

Correspondingly, the impact of *Gugai* for non-state controlled cases is:

$$\frac{\partial^2 MtoB_{it}}{\partial Ownership_{i,t-1}^j} = \beta_3 Nonstatedum_{i,t-1} + \beta_4 Gugai_{i,t-1} * Nonstatedum_{i,t-1}$$

4. Empirical results:

4.1. The effect of *Gugai* on large shareholders

Before formally examining how *Gugai* affects firm value through changes in the distribution of ownership among multiple large shareholders, we first look at whether *Gugai* affects the relationship between top shareholders and the firm's market value. Table 4 reports the estimated results based on model (1) in which the ownership indicators are *Top1* and *Top2-4* , respectively. Columns (1) and (2) of Table 4 are for the whole sample and columns (3) and (4) are for state-controlled and non-state-controlled cases, respectively. As we can see from column (1) of Table 4, the estimated coefficient for *Top1* is negatively significant, indicating that the controlling shareholders in Chinese listed firms in general have negative effect on the firm's market value, suggesting that the stock market in general does not value the state involvement in corporations given that the majority of Chinese largest shareholders in the

listed firms are state or the state-related agencies. This result is consistent with other studies that documents that state share is negatively associated with the firm's market value (e.g. Sun and Tong, 2003). However, the estimated coefficient for the interactive term between *Top1* and the *Gugai* dummy is positively significant in column (1) of Table 4, suggesting that *Gugai* brought in the pressure for the largest shareholder, which changes the behaviour of the largest shareholders in China. Because non-tradable shares can now be freely traded, the controlling shareholders of Chinese listed firms are now facing stronger market discipline and closer scrutiny from the market and from the challenge of other large shareholders; therefore, the controlling shareholders have to restrain themselves from rent-seeking behaviour. Column (2) of Table 4 shows that the estimated coefficient for *Top2-4* is positively significant but the estimated coefficient for the interactive term between *Top2-4* and the *Gugai* dummy is not significant. When we distinguish the *Gugai* effect between the state and nonstate-controlled cases as shown in columns (3) and (4) of Table 4, it turns out that *Gugai* has positive effects on large shareholders particularly in the state-controlled cases. In Column (3) we see that although the estimated coefficient for *Top1* is negatively significant for both state-controlled and non-state-controlled cases, the estimated coefficient for the interactive term between *Top1* and the *Gugai* dummy is positive significant only for the state-controlled cases. This result implies that if *Gugai* restrains the opportunistic behaviour of the largest shareholders in Chinese firms, this effect is more profound in the state-controlled firms, which is logical since there is a larger proportion of non-tradable shares and the ownership is over-concentrated at the hand of the largest shareholder in the state-controlled firms. As far as the effect of *Gugai* on other large shareholders (*Top2-4*) are concerned, the estimated coefficient for the interactive term between the *Gugai* dummy and *Top2-4* differs between the state and non-state controlled cases. The effect turns out to be positive in the former and negative in the later. Again we observe that the positive *Gugai* effect is stronger for the state-controlled cases. In sum, evidence shown in Table 4 confirms hypotheses H2, H3, and H4.

Apart from the key independent variables, some control variables also have significant effects on firm value in Table 4. We observe that the estimated coefficient for firm age (*Age*) is significantly negative in all the estimated equations in Table 4, suggesting that elder firms in general have lower market to book value. The estimated coefficient for the BH share dummy (*BH*) is also negatively significant in all the cases, suggesting that if the firm is also listed in either the B share or the H share market, its market to book value is lower in the A share market. The estimated coefficient for firm size (*Size*) is always positively significant in Table 4, suggesting that large firms normally have higher market to book value. In contrast, the estimated effect of leverage (*Leverage*) is negative and significant in Table 4, suggesting that highly indebted firms have lower market value. It is interesting to observe that the estimated coefficient for the *Gugai* dummy (*Gugai*) is significant with a negative sign in two out of four estimations in Table 4, implying that apart from the effect of *Gugai* on firm value that works through the changes in the ownership structure, *Gugai* itself affects the firm's value negatively. This result is consistent with the intuition. Liquidating non-tradable shares injects more shares into the secondary stock market, which causes the decline of stock prices in general. This explains why we observe that apart from the *Gugai* effect via ownership structure, *Gugai* also has brought about the decline of the firms' market value due to the decline of the stock prices. Finally, the estimated coefficient for state share (*State*) is positively significant in both columns (3) and (4) in Table 4.

4.2. The contestability effect: whole sample

From Table 4 we see that *Gugai* changes the relation between the firm's large shareholders ($Top1, Top2-4$) and the firm's market performance. In this subsection, we focus on how *Gugai* changes the relationship between ownership contestability and the firm's market value. As we reviewed in Section 2, some previous studies document that the lack of ownership contestability damages firm's market value, while a more equally distributed ownership among multiple large shareholders makes the controlling position of the largest shareholder

contestable, hence restrains the largest shareholder's opportunistic behaviour and improves firm value (e.g. Bennedsen and Wolfenzon, 2000; Boch and Hege, 2001; Maury and Pajuste, 2005; Gutierrez and Pombo, 2009). Therefore, in this subsection we examine the interactive term between various indicators of ownership contestability and the *Gugai* dummy so that we can see whether the enhanced ownership contestability is the channel through which *Gugai* improves corporate value in China. More specifically, we use the indicators of ownership contestability defined in Section 3.2., i.e. *Contest1* ; *Contest2* ; *Contest3* ; and *Contest4* , respectively in empirical model (1). The panel data fixed effect estimation results are reported in Table 5.

As we can see from Table 5, the estimated coefficients for the indicators of ownership contestability are negatively significant in all the estimated equations in Table 5, since out ownership contestability indicators (*Contest1* ; *Contest2* ; *Contest3* ; *Contest4*) proxy for the lack of contestability, this results confirms the conventional prediction on the relationship between ownership contestability and the firm's market value, i.e. the lack of ownership contestability damages firm's market value. In addition, what is more important for the purpose of our paper is that in all the cases in Table 5, the estimated coefficient for the interactive term between the ownership contestability indicator and the *Gugai* dummy is significant with a positive sign, suggesting that *Gugai* either has enhanced contestability or the stock market expects that ownership contestability to be enhanced due to liquidating non-tradable shares. This result lends strong support for the ownership contestability theory which predicts that the presence of other multiple large shareholders beyond the largest shareholder improves firm's market performance. Our hypothesis 1 (H1) is clearly supported by the results shown in Table 5.

The results concerning control variables in Table 5 are in general in line with what we have obtained from Table 4. It is worth mentioning that the direct effect of *Gugai* captured by the *Gugai* dummy becomes even stronger in Table 5 because the estimated coefficient for the *Gugai* dummy is negatively significant in all cases in Table 5. Again this result is consistent

with the notion that *Gugai*, although improving firm value via the changes in ownership structure, has negative effects on the market value of the firm due to the expected injection of non-tradable shares into the stock market.

4.3. Differences in the contestability effect between states controlled and non-state-controlled cases

In this subsection, we distinguish the contestability effect between state-controlled and non-state-controlled firms. The reasons why we argue that the contestability effect from *Gugai* may differ between the two groups of firms is obvious. State controlled firms have a larger proportion of non-tradable shares and ownership is more heavily concentrated at the hand of the largest shareholder than non-state controlled firms. Therefore in theory, if *Gugai* results in ownership contestability, the state controlled firms should experience more profound *Gugai* effect in this aspect. We have already obtained some evidence supporting this conjecture concerning how *Gugai* changes the behaviour of large shareholders (see columns (3) and (4) in Table 4). In this subsection, we check whether the contestability effect from *Gugai* differ between the two groups of firms. To make the most of our data, we did not split sample firms into two subsample groups; instead we estimate the empirical model (2) based on the firm-year observations. More specifically, we construct a dummy variable (*Statedum*) that takes the value of one if the state share ratio is larger than 50%, otherwise it is zero. Correspondingly, we construct a dummy variable (*NonStatedum*) that takes the value of one if the state share ratio is less than 50%, otherwise it is zero. We then interact the state (non-state) dummy variables with the key explanatory variables, respectively as seen in empirical model (2) (see Section 3.3). The results of estimating the empirical model (2) are displayed in Table 6. First of all, we observe that the estimated relation between ownership contestability and the firm's market value is negative when it is significant in Table 6, which is consistent with the results shown in Table 5. More importantly, we are more interested in the differences in the estimated effect of the interactive term between the state controlled and non-state controlled

cases. One pattern clearly shown in Table 6 is that the estimated coefficient for the interactive term between ownership contestability indicators and the *Gugai* dummy is positively significant only for the state-controlled cases, while it is not significant in non-state controlled cases. This result provides us with further evidence that the *Gugai* effect in term of enhancing ownership contestability is indeed more profound in state controlled cases as compared to non-state-controlled cases.

5. Conclusions

Although Chinese stock markets have been established for more than twenty years, a large proportion of Chinese listed firms had been held by the state and the state related agencies, these shares were not freely tradable in the stock market before 2005. This feature of Chinese corporate governance has made it possible that the ownership of Chinese listed firms has been extremely highly concentrated at the hand of the largest shareholder before 2005. The controlling position of the largest shareholders in Chinese corporations has not been challenged by other large shareholders beyond the largest shareholder. Although the issue is important, to our best knowledge, there are no previous studies that have investigated the relation between ownership structure and corporate value from the perspective of ownership contestability for Chinese listed firms. In this paper, we take the opportunity of the 2005 split share reform (*Gugai*) to examine whether *Gugai* has taken some effects in this respect. More specifically, we test whether *Gugai* has changed the way in which the largest shareholder *Top1* and other large shareholders *Top2-4* are associated with the firm's market performance. In addition, we test whether *Gugai* has improved the firm's market value by enhancing ownership contestability. We base our empirical analyses on the ownership contestability theory which predicts that a more dispersed ownership structure improves firm value because the presence of multiple large shareholders challenges the controlling position of the largest shareholder and hence restrains the rent-seeking behaviour of the controlling shareholder. We found that China's reform of liquidating no-tradable shares (*Gugai*) has brought about positive effects on corporate governance in terms of enhancing ownership

contestability, which improves the firm's market value. Our evidence also shows that the positive *Gugai* effect is more profound in the state-controlled firms as compared to non-state-controlled firms. We identify that ownership contestability is a channel through which *Gugai* affects firm market performance. The positive effect of *Gugai* on corporate value via ownership contestability is obtained after controlling for the direct effect of *Gugai* on firm value due to the (expected) injection of non-tradable shares into the Chinese stock market.

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Table 1 Distribution of the firms that have undertaken *Gugai*

| | Shengzhen | Shanghai | Total | % of the total |
|-------|-----------|----------|-------|----------------|
| 2005 | 110 | 129 | 239 | 18.63 |
| 2006 | 320 | 585 | 905 | 70.54 |
| 2007 | 49 | 65 | 114 | 8.89 |
| 2008 | 13 | 12 | 25 | 1.95 |
| Total | 492 | 791 | 1283 | 100 |

Notes: The table shows the number of firms that have finished *Gugai* in a specified year.

Sources: CSRC

Table 2 Ownership and its concentration of Chinese listed firms around the *Gugai* period

| | | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 |
|-----------------|--------|---------|---------|---------|---------|---------|---------|---------|
| <i>State</i> | Mean | 0.4074 | 0.3751 | 0.3585 | 0.3429 | 0.2887 | 0.2612 | 0.2294 |
| | Median | 0.4972 | 0.4251 | 0.4019 | 0.3797 | 0.3027 | 0.2738 | 0.2246 |
| <i>Top1</i> | Mean | 50.8743 | 44.0129 | 43.0757 | 41.3121 | 35.9246 | 35.4886 | 35.6054 |
| | Median | 52.4550 | 43.9100 | 42.3750 | 39.8550 | 34.2500 | 34.1900 | 33.9600 |
| <i>Top2 – 4</i> | Mean | 10.9164 | 14.4328 | 15.4200 | 15.3643 | 13.7418 | 12.5869 | 11.9154 |
| | Median | 7.2150 | 11.6700 | 12.8000 | 12.6800 | 11.2250 | 9.9500 | 9.2400 |
| <i>Contest1</i> | Mean | 44.1095 | 34.9079 | 33.4630 | 31.7280 | 27.4931 | 27.6983 | 28.1572 |
| | Median | 47.3350 | 35.0900 | 32.7400 | 30.1200 | 25.1450 | 26.2300 | 26.2820 |
| <i>Contest2</i> | Mean | 23.8022 | 20.2505 | 18.3152 | 14.3990 | 9.1027 | 9.2292 | 9.6119 |
| | Median | 6.9885 | 3.7754 | 3.0087 | 2.9239 | 2.7925 | 3.2594 | 3.5303 |
| <i>Contest3</i> | Mean | 2978.73 | 2409.67 | 2333.88 | 2166.34 | 1666.19 | 1617.54 | 1623.72 |
| | Median | 2859.92 | 2187.55 | 2031.41 | 1874.15 | 1371.86 | 1342.50 | 1339.94 |
| <i>Contest4</i> | Mean | 2464.22 | 1816.68 | 1714.33 | 1566.76 | 1183.89 | 1171.35 | 1197.14 |
| | Median | 2255.37 | 1364.11 | 1165.56 | 1005.25 | 736.82 | 775.48 | 807.74 |
| <i>Obs.</i> | | 144 | 1003 | 1102 | 1102 | 1102 | 1101 | 1100 |

Table 4 The effect of *Gugai* on large shareholders

| | Whole | | State versus Nonstate controlled cases | |
|--|----------------------------------|--------------------------------|--|----------------------------------|
| | 1 | 2 | 3 | 4 |
| Age_{t-1} | -0.0099 (-2.80) | -0.0101 (-2.82) | -0.0099 (-2.80) | -0.0097 (-2.75) |
| BH_{t-1} | -0.2121 (-1.79) | -0.2308 (-1.94) | -0.2253 (-1.90) | -0.2337 (-1.97) |
| $Size_{t-1}$ | 0.1130 (14.98) | 0.1175 (15.72) | 0.1131 (15.00) | 0.1152 (15.44) |
| $Leverage_{t-1}$ | -0.0633 (-3.23) | -0.0643 (-3.36) | -0.0646 (-3.38) | -0.0677 (-3.55) |
| $Growth_{t-1}$ | 0.0081 (0.92) | 0.0008 (0.95) | 0.0008 (0.91) | 0.0008 (0.95) |
| $Gugai_{t-1}$ | -0.0864 (-6.24) | -0.0046 (-0.41) | -0.0764 (-4.90) | -0.0043 (-0.38) |
| $State_{t-1}$ | 0.0225 (1.17) | 0.0235 (1.24) | 0.0499 (2.15) | 0.0361 (1.77) |
| $Top1_{t-1}$ | -0.0011 (-3.12) | | | |
| $Top1_{t-1} * Gugai_{t-1}$ | 0.0017 (7.58) | | | |
| $Top2 - 4_{t-1}$ | | 0.0017 (4.18) | | |
| $Top2 - 4_{t-1} * Gugai_{t-1}$ | | -0.0004 (-1.24) | | |
| $Top1_{t-1} * Statedum_{t-1}$ | | | -0.0011 (-3.27) | |
| $Top1_{t-1} * Gugai_{t-1} * Statedum$ | | | 0.0015 (6.63) | |
| $Top1_{t-1} * NonStatedum_{t-1}$ | | | -0.0007 (-1.78) | |
| $Top1_{t-1} * Gugai_{t-1} * NonStatedum$ | | | 0.0014 (4.09) | |
| $Top2 - 4_{t-1} * Statedum_{t-1}$ | | | | 0.0001 (0.22) |
| $Top2 - 4_{t-1} * Gugai_{t-1} * Statedum$ | | | | 0.0020 (3.66) |
| $Top2 - 4_{t-1} * NonStatedum_{t-1}$ | | | | 0.0019 (4.34) |
| $Top2 - 4_{t-1} * Gugai_{t-1} * NonStatedum$ | | | | -0.0010 (-3.01) |
| Industry | yes | yes | yes | yes |
| R-squared | 0.6918 | 0.6885 | 0.6921 | 0.6912 |
| F-test (p-value) | 5.97(0.00) | 5.91(0.00) | 5.95(0.00) | 5.94(0.00) |
| Observations | 5210 | 5210 | 5210 | 5210 |

Table 5 The contestability effect: Whole sample

| | 1 | 2 | 3 | 4 |
|--------------------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|
| Age_{t-1} | -0.0105 (-2.95) | -0.0106 (-2.97) | -0.0093 (-2.61) | -0.0103 (-2.90) |
| BH_{t-1} | -0.2166 (-1.82) | -0.2070 (-1.74) | -0.2121 (-1.79) | -0.2139 (-1.80) |
| $Size_{t-1}$ | 0.1162 (15.47) | 0.1198 (16.04) | 0.1122 (14.92) | 0.1154 (15.44) |
| $Leverage_{t-1}$ | -0.0638 (-3.33) | -0.0622 (-3.25) | -0.0631 (-3.32) | -0.0635 (-3.33) |
| $Growth_{t-1}$ | 0.0008 (0.95) | 0.0009 (0.98) | 0.0008 (0.96) | 0.0008 (0.94) |
| $Gugai_{t-1}$ | -0.0465 (-3.95) | -0.0196 (-1.86) | -0.3138 (-8.19) | -0.1540 (-7.30) |
| $State_{t-1}$ | 0.0241 (1.25) | 0.0168 (0.89) | 0.0198 (1.04) | 0.0234 (1.23) |
| $Contest1_{t-1}$ | -0.0007 (-3.11) | | | |
| $Contest1_{t-1} * Gugai_{t-1}$ | 0.0009 (5.40) | | | |
| $Contest2_{t-1}$ | | -0.0002 (-3.29) | | |
| $Contest2_{t-1} * Gugai_{t-1}$ | | 0.0004 (2.63) | | |
| $Contest3_{t-1}$ | | | -0.0211 (-2.43) | |
| $Contest3_{t-1} * Gugai_{t-1}$ | | | 0.0403 (8.25) | |
| $Contest4_{t-1}$ | | | | -0.0118 (-2.90) |
| $Contest4_{t-1} * Gugai_{t-1}$ | | | | 0.0206 (7.58) |
| Industry | yes | yes | yes | yes |
| R-squared | 0.6899 | 0.6884 | 0.6925 | 0.6915 |
| Ftest(p-value) | 5.93(0.00) | 5.88(0.00) | 5.97(0.00) | 5.94(0.00) |
| Observations | 5210 | 5210 | 5210 | 5210 |

Table 6 The contestability effect: state controlled versus non-state controlled cases

| | 1 | 2 | 3 | 4 |
|--|----------------------------------|----------------------------------|----------------------------------|----------------------------------|
| Age_{t-1} | -0.0103 (-2.91) | -0.0107 (-3.02) | -0.0092 (-2.60) | -0.0100 (-2.82) |
| BH_{t-1} | -0.2302 (-1.93) | -0.2064 (-1.73) | -0.2272 (-1.92) | -0.2315 (-1.95) |
| $Size_{t-1}$ | 0.1157 (15.40) | 0.1203 (16.10) | 0.1119 (14.88) | 0.1144 (15.30) |
| $Leverage_{t-1}$ | -0.0648 (-3.39) | -0.0620 (-3.24) | -0.0647 (-3.40) | -0.0656 (-3.44) |
| $Growth_{t-1}$ | 0.0008 (0.94) | 0.0007 (0.85) | 0.0008 (0.94) | 0.0008 (0.95) |
| $Gugai_{t-1}$ | -0.0390 (-3.21) | -0.0195 (-1.85) | -0.2573 (-5.42) | -0.1211 (-3.14) |
| $State_{t-1}$ | 0.0525 (2.32) | 0.0273 (1.40) | 0.0476 (2.08) | 0.0539 (5.08) |
| $Contest1_{t-1} * Statedum_{t-1}$ | -0.0009 (-3.68) | | | |
| $Contest1_{t-1} * Gugai_{t-1} * Statedum_{t-1}$ | 0.0009 (4.83) | | | |
| $Contest1_{t-1} * NonStatedum_{t-1}$ | -0.0003 (-1.21) | | | |
| $Contest1_{t-1} * Gugai_{t-1} * NonStatedum_{t-1}$ | 0.0005 (2.04) | | | |
| $Contest2_{t-1} * Statedum_{t-1}$ | | -0.0003 (-3.62) | | |
| $Contest2_{t-1} * Gugai_{t-1} * Statedum_{t-1}$ | | 0.0002 (1.47) | | |
| $Contest2_{t-1} * NonStatedum_{t-1}$ | | 0.00003 (0.19) | | |
| $Contest2_{t-1} * Gugai_{t-1} * NonStatedum_{t-1}$ | | 0.0007 (2.22) | | |
| $Contest3_{t-1} * Statedum_{t-1}$ | | | -0.0173 (-1.95) | |
| $Contest3_{t-1} * Gugai_{t-1} * Statedum_{t-1}$ | | | 0.0341 (6.01) | |
| $Contest3_{t-1} * NonStatedum_{t-1}$ | | | -0.0142 (-1.55) | |
| $Contest3_{t-1} * Gugai_{t-1} * NonStatedum_{t-1}$ | | | 0.0320 (4.97) | |
| $Contest4_{t-1} * Statedum_{t-1}$ | | | | -0.0119 (-2.90) |
| $Contest4_{t-1} * Gugai_{t-1} * Statedum_{t-1}$ | | | | 0.0178 (6.19) |
| $Contest4_{t-1} * NonStatedum_{t-1}$ | | | | -0.0080 (-1.88) |
| $Contest4_{t-1} * Gugai_{t-1} * NonStatedum_{t-1}$ | | | | 0.0145 (4.22) |
| Industry | yes | yes | yes | yes |
| R-squared | 0.6904 | 0.6890 | 0.6929 | 0.6922 |
| Ftest(p-value) | 5.90(0.00) | 5.87(0.00) | 5.96(0.00) | 5.93(0.00) |
| Observations | 5210 | 5210 | 5210 | 5210 |